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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,025	12/26/2001	Achim Grefenstein	217712US0PCT	5931

22850 7590 10/04/2004

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EXAMINER

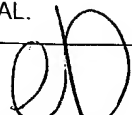
BISSETT, MELANIE D

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/019,025	GREFENSTEIN ET AL.	
	Examiner	Art Unit	
Melanie D. Bissett	1711		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-42 is/are pending in the application.
- 4a) Of the above claim(s) 21-24 and 28-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) ~~18-20, 25-27, 33-42~~ 21-24 and 28-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTC-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. The rejections based on 35 USC 102 has been withdrawn based on the applicant's amendments and arguments; however, the rejection based on 35 USC 103 has been altered to better reflect the state of the claims. The claim rejections based on 35 USC 112 and claim objections have been withdrawn based on the applicant's amendments.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 18-20, 25-27, and 33-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over BASF in view of Sakai et al.

4. BASF teaches a laminate film having a substrate layer, an interlayer, and a top layer that is back-cast with a component (1) or (1') (p. 30 lines 4-21). A preferred interlayer is a toughened PMMA with special-effect colorants (p. 23 lines 17-26), where the top layer also comprises PMMA (p. 23 lines 4-11). As the component to be back-molded onto the laminate film, the reference teaches ABS, PP, and PC/PBT plastics (p. 30 lines 14-21). The laminate sheets have top layer thicknesses of 100 μm to 10 mm (0.1-10 mm) (p. 24 lines 18-21). Substrate (molded) layers of 3-9.5 mm are also shown (p. 25 lines 28-30). Regarding the fiber content of the cast plastic, the reference teaches that component (1), referred to above for back-casting onto a two-layer laminate, comprises 5-50% by weight of a reinforcing fiber (p. 19 lines 10-28). Carbon and glass fibers are noted, having lengths of 1-10 μm . The reference also notes the

possibility of adding mineral fibers. Regarding the mineral filler limitation of the independent claims, it is the examiner's position that this limitation bears little patentable weight since the claims only require the fibers *may be* mineral fillers. It is the examiner's position that the BASF reference teaches this possibility.

5. However, BASF does not seem to teach the applicant's claimed fiber lengths. Sakai teaches methods of incorporating fibers into thermoplastic structures, where the weight average fiber length ranges from 1.0-200 mm (abstract). The molding materials are used to form articles including bumper beams and include thermoplastics and fibers used in the BASF invention (col. 1 lines 9-22; col. 5 line 61-col. 6 line 61). The materials are mixed such that breakage of the fibers is minimized, and the fiber lengths are controlled (col. 4 lines 8-26). Fiber lengths above 1.0 mm are employed to improve mechanical properties, including impact strength, flexural strength, and flexural modulus (col. 7 lines 16-26; examples 13-16 and comparative examples 18-20). Although the reference does not specifically indicate fiber length after molding, it is the examiner's position that the reference teaches how to control fiber length in extrusion processes to obtain moldings having fiber lengths *at least partly greater* than 1 mm. Sakai teaches minimization of breakage in molding processes; thus, one skilled in the art would expect the reinforced materials (especially having high weight average fiber lengths) to maintain their fiber length (col. 15 lines 13-22). It is the examiner's position that it would have been *prima facie* obvious to use Sakai's methods of forming fiber-reinforced thermoplastics to control fiber breakage and form articles having improved impact strength, flexural strength, and flexural modulus.

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6. Regarding the back-molding method of either injection back-molding or cast back-molding, it is noted that BASF teaches back-casting (see above), and Sakai teaches injection molding or other known methods (col. 8 lines 18-27). It is the examiner's position that one of ordinary skill in the art would envision back-casting from the BASF reference. Also, it would have been prima facie obvious to use injection molding, since Sakai teaches injection or other molding processes to provide materials with equally improved physical properties. Regardless, it is noted that the claims are in product-by-process format. It is the examiner's position that the articles formed by different back-molding methods would be indistinguishable; thus, the molding process does not provide patentable weight to the claims in light of the cited prior art.

7. Regarding the single-stage process and direct introduction of the fibers into the back-molding thermoplastic, it is noted that these claims are in product-by-process format. Since the Sakai reference teaches how to incorporate fibers having a specific length into the thermoplastic molding compound without significant breakage, it is the examiner's position that the articles formed by the methods of Sakai's invention would be indistinguishable from those formed by the claimed methods; thus, the mixing process does not provide patentable weight to the claims in light of the cited prior art.

Response to Arguments

8. In response to the applicant's arguments that the applicant has shown unexpected results due to the fiber length, it is the examiner's position that the results shown would be expected by one of ordinary skill in the art. The cited reference, Sakai

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et al., suggests that fiber length plays a role in mechanical properties, where examples show materials having higher fiber lengths have improved impact resistance, flexural modulus, and flexural strength. The declaration provides insufficient evidence to convince the examiner that the improved impact results would be unexpected.

9. Furthermore, the results do not indicate specific fiber length measurements to support a claim that the value of 1mm is critical. Do the materials of the examples have fiber lengths close to the claimed critical 1mm endpoint, or do they extreme examples? There is insufficient evidence to suggest an unexpected increase in properties at 1mm.

10. Still further, the results do not appear to be commensurate in scope with the claims. While the claims encompass moldings made from any plastic and any fiber materials, the examples show only one materials system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie D. Bissett whose telephone number is (571) 272-1068. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mdb


MELANIE BISSETT
PATENT EXAMINER